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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,784	11/26/2003	Daisuke Okonogi	106145-00074	5092

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EXAMINER	
ECHELMEYER, ALIX ELIZABETH	
ART UNIT	PAPER NUMBER
1745	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,784	OKONOGI ET AL.	
	Examiner	Art Unit	
	Alix Elizabeth Echelmeyer	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-18* is/are pending in the application.

4a) Of the above claim(s) *9-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to amendments filed October 31, 2006. Claims 1, 5 and 7 have been amended. Claims 9-18 are withdrawn. Claims 1 and 3-8 are pending and are rejected finally for the reasons given below.

Claim Objections

2. The objection to claim 8 is withdrawn.

Claim Rejections - 35 USC § 112

3. The rejection of claim 7 is withdrawn in light of the amendment.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suenaga et al. (JP 2002305006).

Regarding claim 1, Suenaga et al. teach a laminated fuel cell having a polymer electrolyte membrane layer sandwiched between two separator layers, with seals

contained on the separators that fit into seals on other separators of other fuel cells ([0001], [0105], [0106], Figures 5, 6, 7, 9, 12, and 13).

Regarding claim 5, Suenaga et al. teach a communication hole that is sealed on its sides by the seals attached to the separator (Figures 12 and 13).

As for claim 7, it can be seen from the drawings that the hole is in a vertical direction to the direction of the front and rear surfaces of the separator.

Regarding claim 8, Suenaga et al. teach that the inner circumference of the free passage, interpreted to be the pore, is covered with an insulating member ([0038]).

Suenaga et al. fail to teach that the seal on the separator is a protrusion having a trapezoidal cross-section. It would have been an obvious matter of design choice to make the seals seen in figure 13, for example, with a trapezoidal cross-section instead of rectangular, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. MPEP 2144.04 (IV B).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suegana et al. in view of Kralick (US Pre-grant Publication 2002/0182471).

The teachings of Suegana et al. as discussed above are incorporated herein.

Suegana et al. teach a seal-separator conjugation, with a rubber seal ([0004]) but fail to teach that the seal formed on the front surface is made from a different material than the seal on the rear surface.

Kralick teaches a fuel cell stack having one gasket that is made of a material "compatible" with coolant for the coolant openings, and another gasket made of a material that is "compatible" with air for the reactant flow openings. Kralick further teaches that, since one gasket material may be more expensive than another, selection of different materials based on both properties and cost may reduce the overall costs of the fuel cell system ([0023]).

It would be desirable to use different materials for the seals of different passages based on what substance would be flowing through them in order to select the material with the best properties for the intended substance and with the most cost efficiency in order to reduce the overall costs of the system.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use different types of materials, as taught by Kralick, in the seals taught by Suegana et al. in order to select the most appropriate material for the part and to reduce the overall costs of the system.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suegana et al. in view Uchida et al. (US Patent Number 6,316,139).

The teachings of Suegana et al. as discussed above are incorporated herein.

Suegana et al. teach a seal-separator conjugation having a communication pore but fail to teach that the seal portions are adhered using an insulating primer/adhesive.

Uchida et al. teach the use of an adhesive layer to attach a gasket to a separator in a polymer electrolyte fuel cell wherein the elastomer layer of the gasket is adhered using the adhesive layer (abstract). Uchida et al. also teach that the adhesive layer acts as an insulator (column 4 lines 1-15). Uchida et al. further teach that the adhesive layer is useful because it makes the gasket both easy to position and easy to assemble (abstract).

It would be advantageous to use an insulating adhesive layer as taught by Uchida et al. to attach the seal to the separator in the seal-separator assembly of Suegana et al. in order to make the seal both easy to position and easy to assemble.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the adhesive layer of Uchida et al. to adhere the seal to the separator of Suegana et al. because it would make the seal both easy to position and easy to assemble.

Response to Arguments

9. Applicant's arguments filed October 31, 2006 have been fully considered but they are not persuasive. Applicants argue that the examiner has mistaken the picture frame-shaped member of Suenaga et al. with the sealing material. While Suenaga et al. do teach a picture frame-shaped member that is not the teaching on which the examiner is

relying. Suenaga et al. teach a sealing member in the perimeter of passage holes ([0105], [0106]).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is 571-272-1101. The examiner can normally be reached on Mon-Fri 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy N. Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER

Alix Elizabeth Echelmeyer
Examiner
Art Unit 1745

aee